Protocol for Management of Suspected Anaphylactic Shock in

Manitoba
Health
Public Health Branch

COMMUNICABLE DISEASE CONTROL

Protocol Summary of First Steps for Suspected Anaphylaxis

Symptoms:

- Within minutes, sneezing, coughing, itchiness, "pins and needles" sensation, flushing, facial edema, hives, anxiety, respiratory difficulties, hypotension, shock or collapse, which do not resolve quickly with reassurance and/or re-positioning.

Treatment:

- Call 911
- ABCD's of resuscitation
- Drugs (see Drug Management of Anaphylaxis in lid of Anaphylaxis Kit)

Treatment of Anaphylactic Shock

Anaphylactic (Allergic) Shock – This type of reaction is usually of a violent nature, often occurring with very little warning within a few seconds to minutes following administration of a serum, vaccine, antibiotic (such as penicillin), pollen or other allergic extract, or after stinging by venomous insects. The following signs and symptoms may develop rapidly and dramatically: apprehension, itchiness, flushing of the face, substernal itchiness, stridorous or wheezy breathing, cyanosis, a drop in blood pressure, and loss of consciousness. Death may ensue immediately after the first sign of difficulty, or the patient may recover from the initial signs and symptoms and develop, within the next 30-60 minutes, generalized urticaria, angioedema, acute coryza, bronchial spasm, intestinal and uterine colic and diarrhea.

Anaphylactic Shock should be distinguished from a syncopal episode which is characterized by pallor, slow pulse, salivation, nausea, vomiting and sweating. These events respond to measures taken to improve circulation to the brain: lowering of the head and/or raising the feet. For an incipient episode, having the patient take a few deep breaths may help.

Treatment of Anaphylaxis

Treatment is directed at limiting the absorption of noxious material and by countering the adverse reactions. The ABCD's of resuscitation should be followed, *simultaneously with calling 911.*

The ABCD's refer to:

A – airway

B – breathing

C – circulation

D – drug treatment

The principles and protocol of the ABC's are covered in CPR manuals.

The emphasis in this document is on drug management.

Limitation of Absorption

If possible, absorption of offending substance should be limited. Efforts should be directed at reducing venous blood flow. Place a tourniquet (when possible) above the site of vaccination. Release for 1 minute every 3 minutes if practical.

Drug Treatment

In order to carry out appropriate management an anaphylaxis kit should be available where and when the aforementioned substances are being administered.

Acute Management in Children and Adults

i) If you have not called 911, do it now!

ii) Adrenaline (Epinephrine) (1:1000 solution) – ***Lifesaving: First and Most Important Drug to Give!***

0.01 ml/kg (maximum 0.5 ml per injection) should be given IM in the opposite limb or any more accessible site (excluding the site of inoculation).

Adrenalin, at the same dose as the initial one, can be repeated at 10-15 minute intervals to a maximum of 3 doses.

iii) Benadryl (Diphenhydramine) (50 mg/ml)

Never give benadryl alone or before adrenaline. For relief of itchiness and hives. Intermediate interval before drug takes effect.

2.5 mg/kg to a maximum of 100 mg should be given intra-muscularly. It should be given at a site other than the inoculation.

Benadryl should not be repeated.

After administration of the drugs, if either or both are available, oxygen should be administered and an intravenous should be established.

Prompt transport is essential, as the onset of angioedema may result in complete obstruction of the patient's airway. In almost all cases, transport will be done by ambulance.

Anaphylaxis Kit

Each kit should contain:

1 Page of "Drug Management of Anaphylaxis" guidelines (taped to the inside of the box lid)

2 Tourniquets

3 x 1 ml ampoules of epinephrine (1:1000 solution)

2 x 1 ml vials of diphenhydramine (50mg/ml)

10 x 1ml syringes

3 x 3 ml syringes

12 needles: suggest 21-25G, 4 x 5/8"-7/8"; 4 x 1.25"; 4 x 1.5" *

1 pocket mask

20 alcohol swabs

* gauge and length of needle to be selected appropriate to patient size.

The kits should be closed with an elastic to ensure the drugs are not exposed to light which can cause them to deteriorate.

As the expiry date on a drug approaches, replacements will need to be ordered.

In the case of any use of an anaphylaxis kit (true anaphylaxis or "false alarm"), please do the following as soon as possible after managing the incident:

1. Notify the Public Health Supervisor and Medical Officer of Health by phone (public health nurses).
2. Ensure completion of the Drug Administration Record on the lid of the Anaphylaxis Kit.
3. Complete a detailed incident report and the Health Canada Report of a Vaccine Associated Adverse Event (unless incident turned out to be simple faint).
4. Ensure anaphylaxis kit is refurbished before returning to storage site. The one-way valve of the pocket mask should be discarded and replaced and the mask cleaned according to instructions in the mask case.

Ideally, the kit will rarely have to be used. While immunization is rarely associated with anaphylaxis, the frequency of reactions can be further attenuated with the appropriate routine questioning about predisposing factors (e.g., allergy to eggs or adverse reactions to previous immunizations).

Should you have any questions or comments, please contact your own supervisor (public health nurses) or Medical Officer of Health.

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IF YOU HAVE NOT CALLED 911 — DO IT NOW!

DRUG MANAGEMENT OF ANAPHYLAXIS

(Dosage Based on Average Weight for Age. Use Actual Weight if available to determine dosage.)

1. **ADRENALIN**
   (EPINEPHRINE 1:1000 SOL'N)

Lifesaving: First and Most Important Drug to Give! Give 0.01 ml/kg IM in the opposite limb to a maximum of 0.50 ml. This dosage may be repeated in 10-15 minutes x 2 (up to a total of 3 doses).

The following approximate dosages may be used:

2 to 6 months	0.07 ml
6 to 12 months	0.07 ml-0.1 ml
12 to 18 months	0.1 ml-0.15 ml
18 months to 4 years	0.15 ml
5 years	0.2 ml
6-9 years	0.3 ml
10 to 13 years	0.4 ml
≥14 years	0.5 ml

2. **BENADRYL**
   (DIPHENHYDRAMINE) 50 mg/ml

Never give benadryl alone or before adrenaline. Give 2.5 mg/kg IM to a maximum of 100 mg at site other than inoculation. Do Not Repeat.

The following approximate dosages may be used:

Under age 2 years	0.25 ml
Age 2 to 4 years	0.50 ml
Age 5 to 11 years	1.00 ml
≥ 12 years	2.00 ml

Drug Administration Record

Name of Patient: _____

Age: _____ Date: _____

Location of Clinic: _____

Drugs Administered:

Adrenalin:

1st dose Amount: _____ ml

(if given) Time: _____

Site: _____

2nd dose Amount: _____ ml

(if given) Time: _____

Site: _____

3rd dose Amount: _____ ml

(if given) Time: _____

Site: _____

Benadryl:

One Dose Amount: _____ ml

Only Time: _____

Site: _____

The above chart is to be reproduced and included in each kit.

References:

Canadian Immunization Guide. Fifth Edition 1998 pp. 9-13.

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